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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,845	11/28/2000	Albert Maria Vodermayr	15258-050300US	6144

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EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1774

19

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-12

Office Action Summary

Application No.

09/724,845

Applicant(s)

VODERMAYER ET AL.

Examiner

Camie S Thompson

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-- Th MAILING DATE of this communication app ars on th cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 27, 2003 has been entered.
2. Examiner acknowledges amended claims 11-16 and 19-20.
3. Examiner acknowledges receipt of ribboned priority document and withdraws objection.
4. The objection of claim 13 is withdrawn due to applicant's amended claim 13.
5. The rejection of claims 11-22 under 35 U.S.C. 112, second paragraph is withdrawn due to applicant's amended claims.
6. The rejection of claims 11, 13 and 17-18 under 35 U.S.C 102(b) as being anticipated by Lee et al., U.S. Patent Number 5,401,564 is withdrawn due to applicant's argument.

Claim Rejections - 35 USC § 112

7. Claims 11-22 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

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possession of the claimed invention. The specification does not provide for fiber strands only fiber cords.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 11-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Murphy et al., U.S. Patent Number 4,407,885.

Murphy discloses a composite article with a plurality of layers each including reinforcing fibers of materials selected from the group consisting of carbon and glass wherein the arrays of fibers extend in different directions, forming a web, mesh or grid as per instant claims 11 and 14 (see Figures 1-3 and column 6, lines 22-48). The reference also discloses that the plurality of layers is in a stacked assembly with the layers sequentially adjacent and in contrast with each other (see reference claim 2). In addition, Murphy discloses that at least each alternate of the layers in the stacked assembly include a thermoplastic fibrous material intermixed with the reinforcing fibrous material wherein the thermoplastic fibrous material is selected from a group consisting of heat softenable polyamide, polyacrylic, polyester, polyolefins; any derivative of the above mentioned groups and any mixtures thereof as per instant claims 11, 17 and 18 (see column 6, line 62-column 7, line 47). Heat softenable is interpreted as pulverized. The Murphy reference also discloses that the plurality of layers being bonded together by the thermoplastic material is

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fused at junctures between the fibrous materials and a resin impregnating the plurality of layers as per instant claims 11 and 14 (see reference claim 2). Murphy discloses that the layers of fabric useful may have any desirable shape, size, form, configuration and include woven and non-woven fibers, yarns, threads, filaments and the like as per instant claim 12 (see column 6, lines 22-30). Additionally, Murphy discloses that certain layers may contain little or no thermoplastic fibrous material whereas an adjacent layer may comprise substantial amounts, for example up to 60% (by volume) or higher of thermoplastic material as per instant claims 13 and 15 (see column 7, lines 58-65).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 11 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy et al., U.S. Patent Number 4,407,885.

Murphy discloses a composite article with a plurality of layers each including reinforcing fibers of materials selected from the group consisting of carbon and glass wherein the arrays of fibers extend in different directions, forming a web, mesh or grid as per instant claim 11 (see Figures 1-3 and column 6, lines 22-48). Although the reference does not specifically disclose that the fibers of the first array are carbon and the fibers of the second and third arrays consists of glass

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as per instant claims 21 and 22, the reference does disclose that the fibers can be selected from the group consisting of carbon and glass. It would have been obvious to one of ordinary skill in the art to use carbon fibers in the first array and glass fibers in the second and third arrays to promote secure bonding action by the thermoplastic fibrous material as shown by the reference in column 11, lines 19-36. Murphy does not disclose the diameter of the fibers in the first, second and third arrays as per instant claims 19 and 20. Discovery of optimum values of a result effective variable involves only routine skill in the art in re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA). It would have been obvious to one of ordinary skill in the art to have the fibers of the first array have a smaller diameter than the fibers of the second and third array in order to promote bonding action by the thermoplastic material so as to result in a minimal amount of thermoplastic fibrous material within the composite as shown by Murphy in column 8, lines 10-18.

12. The prior art made of record and not relied upon *Understanding Textiles, Fifth Edition* provides disclosure on cord yarns.

Response to Arguments

13. Applicant's arguments filed March 27, 2003 have been fully considered but they are not persuasive. Applicant argues the definition of the pulverized duroplastic or pulverized inorganic material. The definition of the pulverized duroplastic or pulverized inorganic material is not provided or suggested in the specification. Applicant argues that the Murphy reference does not teach or suggest an assembly including thermoplastic fibrous particles. Applicant does not claim the thermoplastic material as particles. The Murphy reference discloses that the thermoplastic fibrous material may include a variety of well-known heat softenable thermoplastics, which reads on the claims of the instant invention. Applicant argues that Murphy does not teach a composite material that is stiff in the direction of the fibers of the first array and is flexible transversely to the direction. Murphy discloses that the amount of thermoplastic may vary from layer to layer in column 7, lines 53-55. Additionally, Murphy discloses that one skilled in the art can determine the optimum amounts per layer based on the intended use of the composite. Therefore, the Murphy reference reads on instant claim 11, which recites that the first array is impregnated with more plastic than the fibers of the second array. Murphy discloses the motivation to have layers with varying amounts of thermoplastic as a requirement for ensuring bonding action between the layers as shown by the Murphy reference in column 8, lines 1-39. The amount of thermoplastic material found in the first array provides the stiffness in the composite in the direction of the first array and is flexible transversely to that direction is a result effective variable. Also, since both Murphy and applicant disclose using more thermoplastic material in the first array, it would be expected that Murphy and applicant have the same result – stiffness in the direction of the first array.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (703) 305-4488. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly, can be reached at (703) 308-0449. The fax phone numbers for the Group are (703) 872-9310 {before finals} and (703) 872-9311 {after finals}.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Cynthia H. Kelly